

the western part of the middle plateau region the night of the 10th, with temperature 15 to 20 below the normal. On the 11th a fall of 20 occurred in the upper Missouri valley, and on the 12th the cool wave covered an area extending from Lake Superior to New Mexico. During the 13th the cooler weather extended over the Lake region and the Ohio Valley, and a slight fall in temperature occurred in the middle Atlantic and New England states.

A fall of 10 to 20 in temperature was shown in Alberta the morning of the 14th. On the 15th a marked fall in temperature occurred from the upper lake region to New Mexico, on the 16th the cool wave reached the Atlantic coast, and the lowest temperature of the month was noted at points in the middle Atlantic and New England states and the lower lake region on the 17th. During the 16th a cool wave overspread the plateau region and extended thence over the Northwest during the 17th. On the 20th a marked fall in temperature occurred in the upper Mississippi valley and the temperature continued cool in that region until the 21st. From the 22d to the 24th a cool wave advanced from Montana over the upper lake region.

On the 26th the temperature fell 10 to 20 in Montana and was more than 20 below the normal. This cool wave extended over the Missouri Valley during the 27th, with temperature 20 to 30 below the normal over South Dakota and Nebraska. On the 28th a cool wave occupied the western lake region and districts to the southwest, and the night of the 29th reached the middle Atlantic and New England coasts, ending the

period of high temperature which had prevailed in that region after the 21st.

TEMPERATURE, JANUARY TO JULY, INCLUSIVE.

For the period January to July, inclusive, the temperature averaged about normal in the middle Atlantic states, the Lake region, the extreme northwest, on the southeast slope of the Rocky Mountains, over the northern plateau region, and on the north Pacific coast. In New England and over the middle plateau region the mean was about 1 above the normal, and in the south Atlantic and east Gulf states, at Key West, Fla., in the Ohio Valley and Tennessee, the upper Mississippi and Missouri valleys, on the northeast and middle-eastern slopes of the Rocky Mountains, over the southern plateau region, and along the middle and southern Pacific coasts the mean was 1 to 2 below the normal temperature for the period named.

FROST.

Light frost was reported in the interior of New York on the 2d and 17th; in the interior of Pennsylvania on the 18th; in eastern Upper Michigan on the 16th; at points in North Dakota on the 3d, 28th, and 29th; in South Dakota on the 15th; and in Nebraska on the 28th. At Havre, Mont., a heavy frost occurred the morning of the 28th, damaging garden vegetables and corn. Light frost was reported in Utah from the 27th to the 31st; about Carson City, Nev., on the 11th; in northeastern Nevada on the 11th, 12th, 14th, and 24th; at Baker City, Oregon, on the 7th; in southeastern Washington on the 7th, 8th, 10th, 13th, 14th, and 23d; and at Olympia, Wash., on the 7th.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for July, 1892, as determined from the reports of about 2,000 stations, is exhibited on Chart III. In the table of miscellaneous meteorological data the total precipitation and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

The precipitation for July is usually greatest along the east Gulf and west Florida Peninsula coasts, where it exceeds 8.00, and the normal amount exceeds 6.00 along the Carolina coast, and in areas in adjoining parts of western Missouri and western Arkansas, and in southeastern Kansas. Over the greater part of the country east of the Mississippi River, and in large areas between the Mississippi River and the Rocky Mountains the average precipitation for July is 4.00 to 6.00. The greater part of California is practically rainless in July, and less than 1.00 is commonly recorded over the west part of the plateau region and along the Pacific coast south of Washington.

In July, 1892, the monthly precipitation was greatest in the middle and east Gulf states, where it generally exceeded 10.00, and in areas in that region it amounted to 15.00 and 20.00. The monthly amount was also in excess of 10.00 in small areas in the south Atlantic states, Tennessee, and the upper Mississippi valley. The monthly precipitation was 6.00 to 8.00 over the greater part of the country east of the Mississippi and south of the Ohio rivers, and in considerable areas in the middle and upper Mississippi valleys. In California and over the west parts of the middle and southern plateau regions little or no precipitation was reported, and less than 2.00 fell generally over the Rocky Mountain and plateau regions and in the Pacific coast states, save along the immediate north Pacific coast, where more than 2.00 was recorded.

DEPARTURES FROM NORMAL PRECIPITATION.

The monthly precipitation was in excess of the average

amount for July in the east Gulf states, along the Atlantic coast from Florida to Maryland, in the upper Mississippi and upper Missouri valleys, and along the immediate north Pacific coast. The greatest excess in precipitation occurred in Alabama and Mississippi, where it was 4.00 to 8.00; the excess was more than 4.00 in central Iowa and eastern Minnesota, and was more than 2.00 along the Carolina coast, in Virginia, and northwest North Dakota. In New England and the Canadian Maritime Provinces, southeastern New York, eastern Pennsylvania, the western lake region, in the middle Missouri valley and the Southwest, and generally over the Rocky Mountain and plateau regions and on the Pacific coast, except at Helena, Mont., and along the Washington coast, the monthly precipitation was deficient, the most marked deficiency being noted in Nova Scotia, at Eastport Me., New York, N. Y., Milwaukee, Wis., over the Florida Peninsula, and in eastern South Dakota, where it was more than 2.00.

Considered by districts the monthly precipitation averaged about normal in the middle and south Atlantic states, the lower lake region, on the northeast slope of the Rocky Mountains, over the middle plateau region, and along the middle and south Pacific coasts. In districts where the monthly precipitation was in excess the average percentage of the normal was about as follows: East Gulf states, 171; upper Mississippi valley, 148; northern plateau, 133; extreme northwest, 128; north Pacific coast, 116; and Ohio Valley and Tennessee, 115. In districts where the precipitation was deficient the percentage of the normal was about as follows: Key West, Fla., 38; southern plateau, 48; New England, 53; west Gulf states, 54; middle-eastern slope of the Rocky Mountains, 63; Missouri Valley, 67; upper lake region, 69; southeast slope of the Rocky Mountains, 84.

DEVIATIONS FROM AVERAGE PRECIPITATION.

The following table shows for certain stations, as reported by voluntary observers, (1) the average precipitation for July for a series of years; (2) the length of record during which the observations have been taken and from which the average has been computed; (3) the total precipitation for July, 1892; (4) the departure of the current month from

the average; (5) and the extremes for July during the period of observation and the years of occurrence:

State and station.	(1) Average for the month of July.	(2) Length of record.	(3) Total for July, 1892.	(4) Departure from average.	(5) Extremes for July.			
					Greatest.		Least.	
					Am't.	Year.	Am't.	Year.
<i>Arizona.</i>	<i>Inches</i>	<i>Years</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>		<i>Inches</i>	
Fort Apache.....	3.98	16	1.33	- 2.65	8.76	1878	0.14	1884
Fort Mohave.....	0.26	21	0.00	- 0.26	1.80	1881	0.00	†
Whipple Barracks.....	3.02	21	1.74	- 1.28	5.92	1875	0.55	1877
<i>Arkansas.</i>								
Lead Hill.....	4.90	10	3.14	- 1.76	11.60	1883	1.15	1888
<i>California.</i>								
Fort Bidwell.....	0.28	21	0.15	- 0.13	1.55	1891	0.00	1876, 1889
Riverside.....	T.	11			0.02	1888	0.00	
<i>Colorado.</i>								
Las Animas.....	1.79	9	1.09	- 0.70	4.66	1886	0.22	1890
<i>Florida.</i>								
Merritts Island.....	6.06	14	5.03	- 1.03	11.72	1884	0.86	1883
<i>Georgia.</i>								
Forsyth.....	4.61	18	7.52	+ 2.91	12.70	1887	0.32	1878
<i>Idaho.</i>								
Bois Barracks.....	0.18	18	0.00	- 0.18	0.60	1884	0.00	†
Fort Sherman.....	0.40	8	1.11	+ 0.71	1.67	1884	0.00	1882, 1883
<i>Illinois.</i>								
Centralia.....	3.29	14			7.80	1880	0.20	1881
<i>Indiana.</i>								
Lafayette.....	3.65	10	4.80	+ 1.15	5.81	1884	0.88	1887
<i>Indian Territory.</i>								
Fort Supply.....	4.08	13	1.55	- 2.53	9.34	1881	0.98	1886
<i>Iowa.</i>								
Cresco.....	4.32	19	3.10	- 1.22	12.70	1883	1.32	1890
<i>Kansas.</i>								
Independence.....	4.29	20	3.55	- 0.74	11.56	1875	0.77	1888
Salina.....	4.31	9	2.87	- 1.44	7.20	1885	0.30	1890
<i>Louisiana.</i>								
Grand Coteau.....	5.57	8	8.99	+ 3.42	12.36	1889	1.89	1888
<i>Maine.</i>								
Orono.....	3.46	22	1.99	- 1.47	7.11	1887	1.05	1886
<i>Maryland.</i>								
Cumberland.....	3.63	20	1.15	- 2.48	5.59	1887	1.01	1885
<i>Michigan.</i>								
Kalamazoo.....	3.49	16	1.80	- 1.69	6.50	1877	0.79	1887
<i>Missouri.</i>								
Sedalia.....	3.66	14	8.23	+ 4.57	8.23	1892	0.62	1886
<i>Montana.</i>								
Fort Custer.....	1.05	12			2.51	1880	0.06	1890
<i>Nebraska.</i>								
Fort Robinson.....	2.28	8	1.64	- 0.64	3.24	1891	0.74	1886
Genoa (near).....	4.33	16	2.44	- 1.89	7.45	1876	0.90	1877
<i>Nevada.</i>								
Browns.....	0.06	21	0.00	- 0.06	0.69	1876	0.00	*
Carson City.....	0.20	14	T.	- 0.20	1.25	1886	0.00	†
<i>New Hampshire.</i>								
Hanover.....	3.50	19	1.93	- 1.57	8.48	1877	1.66	1884
<i>New Mexico.</i>								
Deming.....	1.57	10	0.20	- 1.37	4.09	1890	0.18	1891
Fort Wingate.....	2.12	21	2.09	- 0.03	4.64	1883	0.26	1873
<i>New York.</i>								
Cooperstown.....	3.18	21	7.80	+ 4.62	7.80	1892	1.52	1888
Plattsburg Barracks.....	3.59	21	5.21	+ 1.62	9.18	1874	1.12	1888
<i>North Carolina.</i>								
Lenoir.....	4.76	19	4.90	+ 0.14	9.10	1886	1.70	1884
<i>Oklahoma.</i>								
Fort Reno.....	2.66	9	1.80	- 0.86	6.97	1891	0.82	1886
Fort Sill.....	2.62	21	1.52	- 1.10	8.21	1875	0.19	1871
<i>Oregon.</i>								
Bandon.....	0.63	13	0.93	+ 0.30	1.90	1878	0.00	1885
Eola.....	0.45	20	0.50	+ 0.05	2.29	1884	0.00	*
<i>Pennsylvania.</i>								
Dyberry.....	4.76	21	2.91	- 1.85	9.28	1887	1.70	1885
Grampian Hills.....	5.12	21	2.41	- 2.71	7.33	1889	2.41	1892
Wellsboro.....	6.24	13	2.15	- 4.09	12.30	1880	2.15	1892
<i>South Carolina.</i>								
Statesburg.....	4.63	11	6.33	+ 1.70	8.34	1890	1.70	1884
<i>South Dakota.</i>								
Fort Sully.....	2.92	21	1.03	- 1.89	7.45	1878	0.25	1890
<i>Texas.</i>								
Austin.....	1.90	19	1.60	- 0.30	5.16	1874	0.00	1871, 1884
Silver Falls.....	2.05	5	1.43	- 0.62	3.06	1886	1.39	1889
<i>Utah.</i>								
Terrace.....	0.16	19	0.00	- 0.16	0.75	1874	0.00	†
<i>Vermont.</i>								
Strafford.....	4.55	19	0.91	- 3.64	6.77	1873	0.91	1892
<i>Virginia.</i>								
Dale Enterprise.....	4.58	12	3.14	- 1.44	7.05	1887	1.13	1883
<i>Washington.</i>								
Fort Townsend.....	0.82	17	0.90	+ 0.08	4.41	1888	0.01	1889
<i>West Virginia.</i>								
Parkersburg.....	5.51	7	3.99	- 1.52	10.33	1888	2.17	1885
<i>Wisconsin.</i>								
Embarrass.....	4.45	21	4.05	- 0.40	10.45	1885	0.85	1877
Madison.....	4.25	21	2.31	- 1.94	9.47	1881	0.79	1886
<i>Wyoming.</i>								
Fort Washakie.....	0.81	7	0.62	- 0.19	1.26	1886	0.29	1889

*Generally.

†Frequently.

PRECIPITATION, JANUARY TO JULY, 1892.

For the period January to July, inclusive, the precipitation averaged about normal in the south Atlantic and east Gulf states, the Ohio Valley and Tennessee, the extreme northwest,

on the middle-eastern slope of the Rocky Mountains, over the southern and northern plateau regions, and along the south Pacific coast. In the upper Mississippi valley and the lower lake region the precipitation was one-fourth to one-half greater, and in the middle Atlantic states, the upper lake region, the Missouri Valley, on the northeast slope of the Rocky Mountains, and over the middle plateau region it was one-tenth to two-tenths greater than usual. In New England, at Key West, Fla., in the west Gulf states, on the southeast slope of the Rocky Mountains, and on the north and middle Pacific coasts the precipitation averaged 7 to 8 tenths of the normal amount for the period named.

YEARS OF GREATEST PRECIPITATION FOR JULY.

At Cooperstown, N. Y., Montgomery and Mobile, Ala., Chattanooga and Memphis, Tenn., Springfield, Ill., Sedalia, Mo., Des Moines, Iowa, and Fort Buford, N. Dak., the precipitation for the current month was the greatest ever noted for July. In the middle Mississippi and middle and lower Ohio valleys the greatest precipitation for July was noted in 1875; elsewhere the years of occurrence were irregular.

YEARS OF LEAST PRECIPITATION FOR JULY.

At Eastport, Me., Strafford, Vt., Grampian and Wellsboro, Pa., and San Antonio, Tex., the precipitation for the current month was the least ever reported for July. The areas of least precipitation for July in preceding years were confined to small areas or localities.

EXCESSIVE PRECIPITATION.

The following tables show, by states, the number of stations reporting monthly precipitation to equal or exceed 10.00; precipitation to equal or exceed 2.50 in 24 hours; and precipitation to equal or exceed 1.00 in 1 hour in July, 1892:

Monthly precipitation to equal or exceed 10.00.

State.	Number of stations.	State.	Number of stations.
Louisiana.....	19	North Carolina.....	3
Mississippi.....	15	Tennessee.....	3
Alabama.....	14	Florida.....	2
Georgia.....	5	Iowa.....	2
South Carolina.....	5	Minnesota.....	1

Precipitation to equal or exceed 2.50 in 24 hours.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Mississippi.....	16	4, 6-8, 7, 7-8, 8, 8-9, 9, 12, 13, 14, 15, 17-18, 23.	Texas.....	5	6, 17, 28-29, 31.
Missouri.....	16	2, 3, 7-8, 9, 13, 14, 16, 20, 28, 29.	Wisconsin.....	5	25, 27, 27-28.
Louisiana.....	15	4, 7, 8-9, 8-10, 9, 15, 16, 17, 17-18, 18, 25, 25-26, 25-27, 26, 27, 28.	Florida.....	4	5-6, 6-7, 8-10, 10, 25.
Iowa.....	14	1, 1-2, 2, 2-3, 21-22, 28, 28-29.	North Carolina.....	4	1, 6, 17, 19-20.
Alabama.....	12	5, 7, 7-8, 8, 8-9, 9, 9-10, 10, 15, 19, 24-25.	Nebraska.....	3	17, 27-28, 29.
Illinois.....	8	2, 2-3, 13.	New York.....	3	1-2, 2-3, 3-4, 22.
Minnesota.....	7	18, 25, 26-27.	Virginia.....	3	*1, 19, 31.
Indiana.....	6	2-3, 3.	Arkansas.....	3	3, 16.
Tennessee.....	6	3-4, 7-8, 14, 31.	Kansas.....	2	17, 27.
Georgia.....	5	4-5, 5, 5-6, 9-10, 17-18.	Michigan.....	2	3.
South Carolina.....	5	5, 5-6, 6, 17-18, 19-20, 20, 30-31, 31.	New Jersey.....	2	30, 31.
			West Virginia.....	2	19, 25.
			Arizona.....	1	25-26.
			Indian Territory.....	1	10.
			Kentucky.....	1	15.
			North Dakota.....	1	21-22.
			Ohio.....	1	30.
			Oklahoma.....	1	17.
			Pennsylvania.....	1	31.
			South Dakota.....	1	19.

*June 30-July 1.

Precipitation to equal or exceed 1.00 in 1 hour.

Iowa.....	7	14, 21, 22, 27.	New Jersey.....	5	3, 25, 30, 31.
Georgia.....	6	5, 9, 17, 19, 29.	Texas.....	5	4, 5, 6, 17.
Alabama.....	6	4, 6, 11, 19, 24, 25, 30.	North Carolina.....	4	3, 12, 17, 20.
Illinois.....	6	2, 13, 23, 29.	North Dakota.....	4	11, 17, 18.
Kentucky.....	6	3, 12, 15, 21-22, 24.	South Dakota.....	4	19, 20, 22, 29.
Louisiana.....	6	7, 8, 11, 15, 16, 26, 27.	Wisconsin.....	4	12, 15, 27.
Mississippi.....	5	5, 8, 9, 16, 28, 31.	Florida.....	3	5, 15, 17, 20, 24.
			Connecticut.....	3	25.
			Missouri.....	3	13, 28.

Precipitation to equal or exceed 1 inch in 1 hour—Continued.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
South Carolina.....	3	1, 5, 18, 31.	Maryland.....	1	1.
Kansas.....	2	15, 16.	Massachusetts.....	1	28.
Minnesota.....	2	25, 26.	Nebraska.....	1	27.
New York.....	2	8, 22.	New Hampshire.....	1	3.
Tennessee.....	2	8, 23.	Ohio.....	1	30.
Arkansas.....	1	31.	Vermont.....	1	29.
Indiana.....	1	20.	Virginia.....	1	3, 28.
Maine.....	1	3.			

Table of excessive precipitation, July, 1892.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Alabama.	<i>Inches.</i>	<i>Inches.</i>		<i>Inches.</i>	<i>h. m.</i>	
Brewton.....	12.26	2.75	10	2.00	2 00	11
Carrollton.....	12.40	3.20	7			
Do.....		2.82	15			
Daphne.....	12.14	2.66	24-25			
Eufaula a.....	11.09					
Florence a.....	10.24					
Florence b.....	12.26	2.98	8			
Fort Deposit.....	10.61			1.26	0 50	4
Do.....				1.36	1 10	19
Greensboro.....	10.37	3.50	5			
Jasper.....		2.57	8			
Livingston a.....	10.45			1.28	0 30	25
Livingston b.....	10.93			2.01	1 15	6
Lynn.....	10.13					
Mobile.....	14.43	2.50	7-8	1.47	1 05	24
Do.....		3.20	24-25	1.34	1 00	25
Do.....				1.57	0 45	30
Montgomery.....		3.69	8-9	1.50	1 00	11
Newburg.....		2.70	9			
Pushmataha.....	10.46					
Sturdevant.....		2.90	9			
Talladega.....	12.41					
Tuscumbia a.....	17.95	10.00	9-10			
Tuscumbia b.....		3.00	9			
Tallassee.....	11.21	2.55	19			
Arizona.						
Payson.....		6.09?	25-26			
Arkansas.						
Harrison.....				1.10	1 00	31
Mount Nebo.....		2.77	16			
Osceola.....		3.30	3			
Connecticut.						
Canton.....				1.33	0 30	25
Voluntown.....				1.00	1 00	8
West Simsbury.....				1.07	0 45	25
Florida.						
Archer.....		2.59	25			
Avon Park.....				1.25	0 50	15
Do.....				2.00	1 45	20
Bristol.....		3.49	10			
Myers.....				1.05	1 00	17
Oxford.....				2.44	1 00	5
Do.....				1.00	0 30	24
Pensacola.....	11.48	4.67	6-7			
Saint Andrews Bay.....	17.40	4.08	5-6			
Do.....		9.85	8-10			
Georgia.						
Dublin.....	10.52	3.41	5	3.41	2 00	5
Eastman.....	11.76	2.96	5-6	1.03	1 00	17
Do.....				1.00	1 00	20
Forsyth.....				1.12	0 45	20
Fort Gaines.....						
Gainesville.....	11.46					
Lafayette.....	10.15	2.54	9-10	1.40	1 00	9
Resaca.....				1.88	0 50	9
Do.....				2.03	2 00	19
Statesboro.....	10.59	4.03	17-18	3.37	2 50	17
Toccoa.....		2.90	4-5			
Illinois.						
Aurora a.....				1.74	1 15	2
Collinsville.....		3.05	13	1.16	0 40	29
Golconda.....						
Louisville.....		2.80	2-3			
Olney a.....		2.66	2-3			
Oswego.....		3.04	2	2.09	1 30	2
Ottawa.....		2.86	2-3			
Pana.....		2.50	2			
Riley.....				1.00	0 28	23
Rushville.....				1.53	0 45	13
Springfield.....		3.20	2-3	1.20	0 52	13
Walnut.....		2.67	2			
Indiana.						
Angola.....		3.30	2-3			
Hawpatch.....		2.78	2-3			
Huntingdon.....		3.00	3			
Logansport a.....		2.58	2-3	1.75	0 55	20
Marion.....		2.93	3			
Wabash.....		4.90	2-3			
Indian Territory.						
Eufaula.....		3.50	10			

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Iowa.	<i>Inches.</i>	<i>Inches.</i>		<i>Inches.</i>	<i>h. m.</i>	
Atlantic.....				1.59	0 45	14
Bonaparte.....				1.68	0 30	21
Centerville.....	11.69	6.00	1			
Corydon.....	12.86	6.19	1-2			
Denison.....				1.15	1 00	14
Dubuque.....		2.66	2-3			
Eagle Grove.....		3.50	1	1.10	1 00	21
Fairfield.....				1.62	0 30	21
Independence.....		3.35	1-2			
Iowa City.....		2.64	28-29			
Iowa Falls.....		3.00	2			
Keokuk.....		2.58	21-22	2.18	2 10	22
Marshall.....		2.62	1-2			
Mount Ayr.....		2.97	28			
Oskaloosa.....		2.62	28			
Seymour.....		3.81	1			
Sioux City.....				1.40	1 00	27
Tipton.....		2.70	1-2			
Do.....		2.70	28-29			
Webster.....		3.37	1-2			
Kansas.						
Gove City.....		3.00	27			
Havensville.....				2.30	0 50	15
Kiowa.....				2.20	1 00	16
Sterling.....		3.55	17			
Kentucky.						
Franklin.....				1.26	1 00	24
Harrodsburg.....				1.80	1 35	12
Lexington.....				2.35	1 50	21-22
Louisville.....				2.00	1 50	3
Paducah b.....				1.05	1 00	15
Shelbyville.....		2.52	15	2.52	2 13	15
Louisiana.						
Abbeville.....	12.74					
Alexandria.....	13.04					
Baton Rouge.....				1.60	0 45	11
Cameron.....		2.96	27			
Cheneyville.....	14.80					
Emilie.....	11.53	3.20	25			
Franklin.....	11.43	3.00	26	3.00	3 00	26
Grand Coteau.....	13.88			1.00	1 00	15
Do.....				1.17	1 10	16
Homer.....				1.68	1 00	27
Houma.....	19.71	5.47	8-10			
Do.....		3.34	17-18			
Do.....		5.35	25-26			
Jeanerette.....	23.08	4.23	15			
Do.....		2.83	16			
Do.....		4.00	26			
Lafayette.....		2.87	26			
Lake Charles.....	13.12	3.40	17			
Do.....	14.20	5.40	27			
Lawrence.....	12.33			2.23	0 55	8
Liberty Hill.....						
Maurepas.....		11.68				
Monroe.....		3.38	4	1.26	1 00	7
New Orleans.....						
North Louisiana Experiment Station.....		2.62	28			
Opelousas.....	13.14	6.00	25-27			
Port Eads.....	14.00	3.80	8-9			
Bayou.....	13.53					
Baselard.....	11.29					
Schriever.....	15.37	3.10	9			
Do.....	14.14	4.05	16			
Do.....		3.00	27			
Sugar Experiment Station.....	10.02	3.17	7			
Thibodeaux.....		2.83	9			
Maine.						
Portland.....				1.00	1 00	3
Maryland.						
Taneytown.....				1.20	1 00	1
Massachusetts.						
Springfield Armory.....				1.16	0 45	28
Michigan.						
Madison.....		3.25	3			
Noble.....		3.51	3			
Minnesota.						
Albert Lea.....		2.70	25			
Duluth.....				1.05	1 00	25
Farmington.....		3.95	18			
Maple Plain.....		5.11	26-27			
Minneapolis (Weather Bureau).....	11.87	7.80	26-27			
Minneapolis (V. O.).....	12.01	7.91	26-27			
Northfield.....		2.75	18			
Red Wing.....		2.70	26-27			
Saint Paul.....		4.91	26-27	1.00	0 15	26
Mississippi.						
Aberdeen.....		2.50	7-8			
Agricultural College.....	13.39	7.24	7-8			
Batesville.....				1.80	1 20	8
Do.....				1.80	1 10	16
Booneville.....	14.03	2.65	9			
Brookhaven.....	15.63	4.72	8			
Canton.....	11.53					
Cleveland.....		2.57	4			
Columbus a.....	14.49	4.49	8			
Do.....		2.72	9			
Columbus b.....	15.83	8.30	7-8			
Crystal Springs.....	12.99	4.00	7			
Edwards.....	12.11	5.00	7-8			
Hattiesburg.....				1.13	0 45	28

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
<i>Mississippi—Continued.</i>		<i>Inches.</i>	<i>Inches.</i>		<i>Inches</i>	<i>h. m.</i>
Hernando			1.47		1 00	
Do.			1.19		1 00	
Louisville	10.69	4.40	8			
Macon	23.87	16.70	6-8	2.00	2 00	1
Meridian	11.41			1.19	0 36	3
Moss Point	17.81	4.30	9			
Do.		2.50	12			
Do.		2.75	15			
Do.		4.60	23			
Okolona	12.27	7.90	8-9			
Palo Alto		3.18	8			
Ship Island	11.49					
University	14.14	2.86	7-8			
Do.		3.49	13-14			
Vicksburg		3.79	17-18			
Yazoo City		2.64	8			
<i>Missouri.</i>						
Chillicothe a.		3.14	29			
Darksville		2.62	2			
Dunnegan		2.50	13			
East Lynne		2.50	2			
Excelsior Springs		4.75	28			
Galt		3.10	14			
Glasgow		2.92	2			
Ironton		2.50	7-8			
Lamonte		3.17	2			
Lexington				1.70	1 00	2
Linneus		3.01	9			
Do.		2.62	28			
Mexico		2.52	20			
Mount Vernon		3.20	16			
New Palestine		2.58	3	1.52	0 20	2
Sedalia		2.96	28			
Strother				2.00	2 00	1
Vermont		2.63	2			
Warrenton		2.90	13			
<i>Nebraska.</i>						
Culbertson a		2.88	17			
Nebraska City		2.50	29			
North Platte		3.13	27-28	2.75	1 30	2
<i>New Hampshire.</i>						
Antrim				1.25	0 30	
<i>New Jersey.</i>						
Beverly				1.08	0 45	2
Franklinville		4.25	31	4.25	2 40	3
Moorestown		3.00	30	3.00	1 23	3
Oceanic				1.48	1 20	
River Vale				2.10	1.30	2
<i>New York.</i>						
Eden Center		2.85	1-2			
Hess Road Station		2.99	2-3			
Do.		2.53	22	2.53	0 30	2
Malone		3.05	3-4	1.42	0 55	
<i>North Carolina.</i>						
Fayetteville	10.32					
Kittyhawk		2.58	19-20			
Lenoir				1.50	1 00	1
Newbern				1.85	0 35	2
Saxon				1.86	0 45	
Southern Pines	10.83	2.65	6			
Southport		4.05	1			
Wilmington	10.26	3.25	17	2.28	1 27	1
Do.				2.00	1 15	2
<i>North Dakota.</i>						
Fort Buford		3.51	21-22			
Jamestown				1.25	1 00	1
Valley City				1.00	1 00	1
Wild Rice				1.08	1 05	1
Woodbridge				1.41	0 45	1
<i>Ohio.</i>						
Celina		3.25	30			
Portsmouth a				1.62	0 15	3
<i>Oklahoma Territory.</i>						
Kingfisher		2.50	17			
<i>Pennsylvania.</i>						
Stoyestown		3.13	31			
<i>South Carolina.</i>						
Charleston	10.33	3.68	5-6	1.44	1 00	
Do.		3.06	17-18	1.78	1 00	
Cheraw a	13.47	3.12	19-20			
Do.		2.97	31			
Cheraw b	12.67	2.95	20			
Do.		3.10	31			
Effingham		3.27	31			
Florence	10.26	3.90	30-31			
Green Pond		3.30	6			
Port Royal				1.17	1 00	1
Saint Georges				1.25	0 30	3
Society Hill	11.28					
<i>South Dakota.</i>						
Aberdeen		2.52	19	2.52	1 15	1
Cross				2.33	1 20	2
Gary				1.19	0 30	2
Millbank				1.05	1 00	2
<i>Tennessee.</i>						
Arlington	10.08	3.15	3-4			
Chattanooga				1.36	0 49	2
Covington a		3.28	7-8			
Dunlap		2.75	31			
Jackson	10.33	3.70	7-8			
Johnsonville	12.16					

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
<i>Tennessee—Continued.</i>		<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>h. m.</i>	
Memphis.....		3.74	7-8	1.00	1 00	8
Savannah.....		2.90	14			
<i>Texas.</i>						
Belton.....				1.86	1 00	5
Elmendorf.....		2.60	6	2.60	2 00	6
Huntsville.....		2.50	6	2.50	1 30	6
Hallettsville.....				1.03	0 30	4
Orange.....		2.60	17			
Roby.....		3.63	31			
Tyler.....				1.51	0 55	17
Wichita Falls.....		3.00	28-29			
<i>Vermont.</i>						
Burlington.....				1.10	1 00	29
<i>Virginia.</i>						
Abingdon.....		2.90	31			
Birdsnest.....		3.10	19			
Danville.....		4.26	*			
Lynchburg.....				1.00	0 20	3
Do.....				2.00	1 00	28
<i>West Virginia.</i>						
Ella.....		3.92	25			
Huntington.....		3.12	19			
<i>Wisconsin.</i>						
Chippewa Falls.....		3.77	27-28			
Crandon.....				1.35	0 30	15
Hudson.....		6.30	27			
La Crosse.....				1.78	1 05	27
Menomonie.....		3.30	27			
Oshkosh.....		3.32	27			
Pepin.....		2.53	25			
Richland Center.....				1.05	0 45	12
Westfield.....				1.25	0 30	12

* June 30 to July 1.

MAXIMUM RAINFALL IN ONE HOUR OR LESS.

The following table is a record of the heaviest rainfall during July, 1892, for periods of five and ten minutes and one hour, as reported by regular stations of the Weather Bureau furnished with self-registering gauges:

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
	Inch.		Inch.		Inch.	
Atlanta, Ga.	0.32	12	0.50	12	0.70	12
Bismarck, N. Dak.	0.15	11	0.30	11	0.85	11
Boston, Mass.	0.25	3	0.28	3	0.42	3
Buffalo, N. Y.	0.20	13	0.35	13	0.65	13
Cincinnati, Ohio	0.10	2	0.15	2, 15	0.25	15
Chicago, Ill.	0.08	29	0.14	29	0.55	2
Cleveland, Ohio	0.32	24	0.49	24	0.93	24
Denver, Colo.	0.06	25	0.10	25	0.20	25
Detroit, Mich.	0.35	27	0.52	27	0.80	27
Dodge City, Kans.	0.21	16	0.28	16	0.29	16
Duluth, Minn.	0.20	25	0.40	25	1.05	25
Eastport, Me.	0.07	3	0.10	4	0.23	4
Galveston, Tex.	0.19	4	0.20	4	0.35	8
Indianapolis, Ind.	0.30	26	0.38	26	0.46	26
Jacksonville, Fla.	0.20	25	0.25	25	0.85	25
Jupiter, Fla.						
Kansas City, Mo.	0.20	2	0.35	2	0.95	2
Key West, Fla.	0.07	8	0.09	4	0.27	4
Marquette, Mich.	0.02	27	0.04	27	0.21	27
Memphis, Tenn.	0.25	11	0.45	11	1.00	8
Milwaukee, Wis.	0.03	29	0.05	29	0.17	29
New Orleans, La.	0.22	7	0.35	7	1.26	7
New York, N. Y.	0.25	3	0.41	3	0.70	3
Norfolk, Va.	0.29	2	0.45	2	0.88	14
Philadelphia, Pa.	0.31	3	0.39	3	0.64	3
Philadelphia Water Works						
Pittsburg, Pa.						
Portland, Oregon	0.02	16	0.03	16	0.13	16
Saint Louis, Mo.	0.35	13	0.57	13	0.75	13
Saint Paul, Minn.	0.40	26	0.70	26	1	
Salt Lake City, Utah						
San Diego, Cal.						
San Francisco, Cal.						
Savannah, Ga.	0.33	18	0.52	18	1.48	18
Tampa, Fla.	0.35	7	0.50	7	0.81	7
Washington, D. C.	0.32	14	0.53	14	0.86	19
Wilmington, N. C.	0.38	10	0.60	20	1.80	20

* Less than 0.05 in 1 hour.

† Self-register out of order.

‡ Gauge overflowed.

The following tables show the number of years for which monthly precipitation to equal or exceed 10.00 inches, daily precipitation to equal or exceed 2.50 inches, and hourly precipitation to equal or exceed 1.00 inch has been reported in the several states and territories for July during the last 23 years:

Excessive monthly precipitation.

State.	No. years noted.	State.	No. years noted.
Florida	17	Maryland	3
North Carolina	13	Minnesota	3
Georgia	12	The Dakotas	2
New Hampshire	11	Virginia	2
Alabama	10	West Virginia	2
South Carolina	10	Colorado	1
Iowa	9	Connecticut	1
Louisiana	9	Delaware	1
Kansas	8	District of Columbia	1
Missouri	7	Indian Territory	1
Ohio	7	Kentucky	1
Indiana	6	Arizona	0
Nebraska	6	Idaho	0
Pennsylvania	6	California	0
New York	5	Maine	0
Tennessee	5	Montana	0
Mississippi	5	Nevada	0
Massachusetts	4	New Mexico	0
Michigan	4	Oregon	0
Texas	4	Rhode Island	0
Illinois	3	Utah	0
New Jersey	3	Vermont	0
Arkansas	3	Washington	0
Wisconsin	3	Wyoming	0

Excessive daily precipitation (24 hours).

State.	No. years noted.	State.	No. years noted.
Kansas	19	Kentucky	7
Iowa	18	New Jersey	7
Indiana	17	Virginia	7
North Carolina	16	Connecticut	6
Georgia	15	New Hampshire	6
Nebraska	15	West Virginia	5
Pennsylvania	15	District of Columbia	4
South Carolina	15	Indian Territory	4
Florida	14	Arkansas	4
Texas	14	Montana	3
The Dakotas	13	Rhode Island	3
Illinois	12	Arizona	3
Louisiana	12	Delaware	3
Ohio	11	Maine	2
Alabama	11	Colorado	2
Wisconsin	10	New Mexico	2
Mississippi	10	Oregon	2
Missouri	10	Vermont	1
New York	10	California	1
Tennessee	9	Idaho	0
Massachusetts	9	Nevada	0
Maryland	8	Utah	0
Minnesota	8	Washington	0
Michigan	8	Wyoming	0

Excessive hourly precipitation.

State.	No. years noted.	State.	No. years noted.
Iowa	17	Maryland	5
Pennsylvania	15	Kentucky	5
Kansas	15	Wisconsin	5
North Carolina	15	Wyoming	5
Illinois	14	Colorado	4
Alabama	13	New Mexico	4
Florida	13	West Virginia	4
Indiana	13	Maine	3
Nebraska	13	New Jersey	3
Michigan	12	Missouri	3
The Dakotas	12	District of Columbia	2
Georgia	11	Indian Territory	2
New York	11	Connecticut	2
Texas	11	New Hampshire	2
Virginia	9	California	1
Ohio	9	Montana	1
Louisiana	9	Utah	1
South Carolina	9	Nevada	1
Tennessee	9	Vermont	1
Arkansas	8	Delaware	0
Minnesota	8	Idaho	0
Arizona	7	Oregon	0
Massachusetts	6	Rhode Island	0
Mississippi	6	Washington	0

The following tables give exceptionally heavy monthly, daily, and hourly precipitation reported for July during the last 23 years:

Monthly.

Station and state.	Am't.	Year.	Station and state.	Am't.	Year.
	Inches.			Inches.	
White, Tenn.	28.11	1883	Wilmington, N. C.	21.12	1886
Mount Washington, N. H.	23.90	1884	Auburn, Ala.	21.09	1887
Macon, Miss.	23.87	1892			

Daily (24 hours).

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
	Inches.			Inches.	
Edwards, Miss.	16.70	6-8, 1892	Greenville, Miss.	6.21	27-28, 1891
Tuscumbia, Ala.	10.00	9-10, 1892	Corydon, Iowa	6.19	1-2, 1892
Union Point, Ga.	10.00	29, 1887	Grand Junction, Tenn.	6.10	13-14, 1890
Saint Andrews Bay, Fla.	9.85	8-10, 1892	Payson, Ariz.	6.09	25-26, 1892
South Orange, N. J.	8.57	30-31, 1889	Charleston, S. C.	6.07	27-28, 1890
Columbus, Miss.	8.30	7-8, 1892	De Land, Fla.	6.05	12-13, 1891
Fort Barracas, Fla.	8.28	23-23, 1890	Centerville, Iowa	6.00	1, 1892
Logan, Iowa	8.00	10, 1878	Opelousas, La.	6.00	25-27, 1892
Kolona, Miss.	7.90	8-9, 1892	Russellville, Ark.	6.00	29, 1889
Minneapolis, Minn.	7.80	26-27, 1892	Houma, La.	5.47	8-10, 1892
Plaquemine, La.	7.75	5, 1891	Lake Charles, La.	5.40	27, 1892
Independence, Mo.	7.61	14, 1885	Manhattan, Kans.	5.38	23, 1889
Wilmington, N. C.	7.33	15, 1886	Houma, La.	5.35	25-26, 1892
Agricultural Col., Miss.	7.24	7-8, 1892	Manchester, N. H.	5.17	23-24, 1887
Hulmeville, Pa.	7.00	29, 1879	Rock Island Arsenal, Ill.	5.16	13, 1889
Marengo, Ind.	7.00	23, 1890	Maple Plain, Minn.	5.11	26-27, 1892
Cheboygan, Mich.	6.34	7-8, 1890	Edwards, Miss.	5.00	7-8, 1892
Hudson, Wis.	6.30	27, 1892	Fort Clark, Tex.	5.00	10, 1889

One hour and less.

Station and state.	Amount.	Time.	Date.
	Inches.	h. m.	
Savannah, Ga.	0.47	0 05	18, 1891
Jupiter, Fla.	0.45	0 05	21, 1891
Do.	0.43	0 05	21, 1890
Boston, Mass.	0.40	0 05	4, 1891
Chicago, Ill.	0.40	0 05	14, 1890
Dodge City, Kans.	0.40	0 05	6, 1891
Savannah, Ga.	0.40	0 05	8, 1890
Washington, D. C.	0.40	0 05	15, 1891
Saint Paul, Minn.	0.40	0 05	26, 1892
Wilmington, N. C.	0.38	0 05	10, 1892
Detroit, Mich.	0.35	0 05	27, 1892
Saint Louis, Mo.	0.35	0 05	13, 1892
Tampa, Fla.	0.35	0 05	7, 1892
Savannah, Ga.	0.33	0 05	18, 1892
Atlanta, Ga.	0.32	0 05	12, 1892
Cleveland, Ohio	0.32	0 05	24, 1892
Washington, D. C.	0.32	0 05	14, 1892
Philadelphia, Pa.	0.31	0 05	3, 1892
Indianapolis, Ind.	0.30	0 05	26, 1892
Washington, D. C.	0.30	0 05	2, 1890
Norfolk, Va.	0.29	0 05	2, 1892
Boston, Mass.	0.25	0 05	3, 1892
Memphis, Tenn.	0.25	0 05	11, 1892
New York, N. Y.	0.25	0 05	3, 1892
Huron, S. Dak.	1.30	0 10	26, 1885
Albany, N. Y.	1.22	0 10	10, 1876
Savannah, Ga.	0.92	0 10	18, 1891
Saint Paul, Minn.	0.70	0 10	26, 1892
Dubuque, Iowa	0.67	0 10	2, 1889
Wilmington, N. C.	0.60	0 10	20, 1892
Washington, D. C.	0.53	0 10	14, 1892
Detroit, Mich.	0.52	0 10	27, 1892
Savannah, Ga.	0.52	0 10	18, 1892
Atlanta, Ga.	0.50	0 10	12, 1892
Norfolk, Va.	0.50	0 10	18, 1890
New York, N. Y.	0.50	0 10	27, 1880
Tampa, Fla.	0.50	0 10	7, 1892
Sandusky, Ohio	2.25	0 15	11, 1879
Portsmouth, Ohio	1.62	0 15	30, 1892
Amana, Iowa	1.56	0 15	31, 1878
New Orleans, La.	1.40	0 15	6, 1889
Philo, Ill.	1.20	0 15	8, 1888
New York, N. Y.	1.00	0 15	13, 1880
New Market, Ala.	1.08	0 15	12, 1889
Ranococas, N. J.	1.00	0 15	17, 1890
Saint Paul, Minn.	1.00	0 15	26, 1892
Amherst, Mass.	2.00	0 20	16, 1879
West Leavenworth, Kans.	1.90	0 20	21, 1887
New Palestine, Mo.	1.52	0 20	28, 1892
Lynchburg, Va.	1.00	0 20	3, 1892
Logansport, Ind.	3.50	0 30	7, 1879
Hess Road Station, N. Y.	2.53	0 30	22, 1892
Wilkesbarre, Pa.	2.50	0 30	15, 1890
Benton Harbor, Mich.	2.01	0 30	14, 1890
Fairfield, Iowa	1.62	0 30	21, 1892
Newbern, N. C.	1.35	0 35	20, 1892
Jacksonville, Fla.	3.49	0 40	6, 1886
Springer, N. Mex.	3.85	0 50	13, 1891
Lansing, Mich.	3.40	1 00	21, 1883
Rock Island Arsenal, Ill.	5.16	1 15	13, 1889
Tucson, Ariz.	5.10	1 45	11, 1878

HAIL.

Description of the more severe hailstorms of the month is given under "Local storms." Hail was reported as follows: 1st, Arizona, Colorado, Maryland, Nebraska, Pennsylvania, South Carolina, and West Virginia. 2d, Illinois and Kansas. 3d, Maryland, New Hampshire, and New Jersey. 4th, New Mexico. 5th, Georgia, New Mexico, New York, and

Pennsylvania. 6th, Arizona. 7th, Illinois, Kentucky, Wisconsin, and Wyoming. 8th, Connecticut, Missouri, Nevada, and New York. 9th, Montana. 10th, California. 11th, North Dakota and Oregon. 12th, Iowa, Nebraska, and New Mexico. 13th, Colorado, Illinois, Nebraska, New York, North Dakota, and Pennsylvania.

14th, Colorado, Iowa, Nebraska, North Dakota, and South Dakota. 15th, Colorado, Michigan, New York, Ohio, and Pennsylvania. 16th, Colorado, Illinois, New Hampshire, and New Mexico. 17th, Colorado and North Dakota. 18th, Colorado, Kansas, North Dakota, and Ohio. 19th, Arkansas, North Dakota, and South Dakota. 20th, Illinois, Indiana, Iowa, Missouri, and New York. 21st, Arizona, Nebraska, and South Dakota. 22d, Arizona, Colorado, Maryland,

Michigan, and South Dakota. 22d, Arizona, Colorado, Maryland, Michigan, Minnesota, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Pennsylvania, and South Dakota.

23d, Colorado, Michigan, New Jersey, and New Mexico. 24th, Iowa, Michigan, and Ohio. 25th, Colorado, Florida, Iowa, Pennsylvania, and South Dakota. 26th, New Jersey, New York, Pennsylvania, and South Dakota. 27th, Colorado, Pennsylvania, South Dakota, Virginia, West Virginia, and Wisconsin. 28th, California, Colorado, Missouri, and Virginia. 29th, New York and South Dakota. 30th, Kansas, Nebraska, North Dakota, and Wisconsin. 31st, Arkansas, Colorado, Georgia, Iowa, Kansas, Nebraska, New Mexico, Oklahoma, Texas, Virginia, and Wisconsin.

WINDS.

The prevailing winds for July, 1892, are shown on Chart II by arrows flying with the wind. In the New England, middle and south Atlantic, and east Gulf states, and the northern plateau regions the winds were generally from south to southwest; over the Florida Peninsula, from east to southeast; in the west Gulf states, the Ohio Valley and Tennessee, the upper lake region, the upper Mississippi valley, and over the southern and middle plateau regions, from southeast to southwest; in the lower lake region, on the northeast slope of the Rocky Mountains, and on the north and middle Pacific coasts, from southwest to northwest; in the Missouri Valley, from east to south; on the middle-eastern and southeastern slopes of the Rocky Mountains, from southeast to south; on the south Pacific coast, from west to northwest; and in the extreme northwest, variable.

HIGH WINDS.

(In miles per hour.)

Wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows: 1st, 54, se., at Kearney, Nebr.; 50, se., at Dodge City, Kans.; 50, s., at Amarillo, Tex. 3d, 90, w., at Mount Washington, N. H. 4th, 90, nw., at Mount Washington, N. H.; 54, sw., at Helena, Mont. 11th, 50, s., at Fort Canby, Wash. 13th, 56, nw., at Lexington, Ky. 20th, 60, w., at Huron, S. Dak. 22d, 50, se., at Tucson, Ariz. 24th, 64, nw., at Cleveland, Ohio; 57, nw., at Sandusky, Ohio. 25th, 56, w., at Huron, S. Dak. 27th, 60, ne., at Winnemucca, Nev.

LOCAL STORMS.

1st.—A hailstorm passed over the north part of Berkeley county, W. Va., in the afternoon, leveling wheat in a path about one mile in width. Corn about Taneytown, Md., was reported damaged by hail. Several buildings were struck by lightning and burned near Paw Paw, Mich. A thunderstorm, with high wind, destroyed barns about Allison, Kans. A violent thunderstorm in the evening damaged property to the estimated value of \$50,000 about Mason, Nebr. A thunderstorm, with heavy rain, began at Kearney, Nebr., in the evening; the wind reached a velocity of 54 miles per hour from the southeast, and a barn was struck by lightning and burned. A severe storm occurred at David City, Nebr., in the evening, destroying trees and buildings at the Fair ground; one building was apparently crushed in from the northwest. A destructive hailstorm was reported in Gage county, Nebr.

2d.—A heavy thunder, wind, and rain storm visited Putnam, Hancock, Wood, Wyandot, and Huron counties, Ohio, in the evening. The general course of the storm was east; it developed greatest force at Carey and Bluffton, Ohio, and was last noted over Medina county. A heavy storm of wind and rain swept over Hamilton county, Ohio, between 5 and 6 p. m., causing considerable damage of a minor character. At Bluffton, Ohio, a thunder, wind, and rain storm moved east in a path about 200 feet in width at midnight, damaging buildings

to the extent of about \$5,000. Near Van Wert, Ohio, one person was killed, a number were injured, and property was destroyed by lightning. At Hassan, Ohio, a storm began 11.45 p. m., 2d, and ended 12.30 a. m., 3d; buildings were unroofed and moved from their foundations, and orchards and crops were destroyed. At Foraker, Ohio, a thunder and rain storm moved southeast in a path about 20 rods in width at night, wrecking several buildings.

A storm, with funnel-shaped cloud, was reported at Tocsin, Ind. The cloud had a whirling motion, and timber, etc., were carried up in the funnel; damage placed at \$5,000. A heavy rainstorm, with some thunder and lightning, occurred at Huntington, Ind. A severe storm, with heavy rain, moved southeast at Winchester, Ill., at 5.56 p. m. At 5.30 p. m. a severe storm moved eastward in a zigzag path 600 to 800 feet in width at Chapin, Ill., the south edge of the path touching that place. Some rain fell before, and heavy rain occurred after the passage of the storm, and hail, thunder, and lightning were reported; several persons were injured; \$2,000 damage was caused to buildings; and crops were destroyed to the estimated value of \$15,000. During a moderate thunderstorm at Springfield, Ill., the wind reached a velocity of 34 miles per hour from the south, damaging trees. An exceptionally heavy rainstorm occurred about Ottawa, Ill., in the evening. Great damage by storm was reported in Henry county, Ill.; one person was killed, four were injured, and much property was destroyed at Geneseo, Ill.

A heavy windstorm damaged timber about Austin, Tenn. At Hannibal, Mo., a thunderstorm began at 5.05 p. m. and continued during the night, damaging trees, etc. Mexico, Mo., and vicinity, was visited by a destructive storm at night; damage estimated at \$6,000. The storm was also severe at Platte River and Withers Mills, Mo. A tornado, with black funnel-shaped cloud, passed about 6 miles north of Davenport, Iowa, between 5.30 and 6 p. m. The storm moved almost due east, the course changing to southeast at times; the length of the path was about 15 miles, and its width averaged about 40 rods. It was attended by heavy rain, sharp thunder, and vivid lightning, and destroyed property to the estimated value of \$8,000 to \$10,000. Débris in the track was generally thrown eastward. In places trees on the north side of the track were thrown north, and on the south side of the track they were thrown south. The duration of the storm at any one point did not exceed 2 to 3 minutes.

3d.—A heavy rainstorm moved northeast over Hartford, Me. At North Buckfield, Me., a thunderstorm moved east in a path 10 to 20 rods in width at 3 p. m., causing damage to the extent of \$3,000. A thunderstorm at 2.30 p. m., damaged property to the value of \$5,000 at Paris, Me. During a heavy rain and thunder storm at Manchester, N. H., from 4 to 6.30 p. m., a house was struck by lightning. A thunder, rain, and hail storm moved northeast over Church Hill, Md., at 6.30 p. m., wrecking several buildings. Damage was caused by high